AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/565,164

Attorney Docket No.: Q92717

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

## LISTING OF CLAIMS:

1. (Original) An inositol derivative of formula (I):

$$\begin{array}{c|c}
(OR^1)_4 & (OR^1)_4 \\
\hline
R^3O & OR^2
\end{array}$$
(I)

wherein

R<sup>1</sup> is

, where n is an integer in the range of 1 to 12;

 $R^2$  and  $R^3$  are each independently H, alkyl, arylalkyl, cycloalkyl, heteroalkyl, - $(CH_2)_mNHR'$ , - $(CH_2)_lCO_2R''$ , -COR''' or - $SO_2R''''$ , where R', R'', R''' and R'''' are each alkyl, m is an integer in the range of 2 to 5, and 1 is an integer in the range of 1 to 5;

p is an integer in the range of 0 to 2; and

X and X' are each independently -O-CO-O-, -O-CO-NH- $(CH_2)_m$ -O-, -O-CO- $(CH_2)_l$ -O- or -O- $(CH_2)_l$ -CO-NH- $(CH_2)_m$ -O-, where m and l are the same as defined above.

2. (Original) The inositol derivative of claim 1, which is represented by formula (XV):

$$R^{1}O$$
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $R^{1}O$ 
 $OR^{1}$ 
 $O$ 

wherein  $R^1$ ,  $R^2$ ,  $R^3$ , X, X' and p are the same as defined in claim 1.

- 3. (Original) The inositol derivative of claim 1, wherein p is 0 or 1.
- 4. (Original) The inositol derivative of claim 1, wherein n is an integer in the range of 3 to 8.
- 5. (Original) The inositol derivative of claim 1, which is represented by formula (II), (III) or (IV):

$$R^3O$$
 $R^1O$ 
 $R^1O$ 

(II)

$$\begin{array}{c|c}
R^{l}O & OR^{l} \\
R^{l}O & OR^{l}
\end{array}$$

$$\begin{array}{c|c}
R^{l}O & OR^{l}
\end{array}$$

$$\begin{array}{c|c}
R^{l}O & OR^{l}
\end{array}$$

(III)

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/565,164

Attorney Docket No.: Q92717

$$R^{1}O \xrightarrow{QR^{1}} QR^{1} QR^{1} QR^{1}$$

$$R^{1}O \xrightarrow{R^{1}O} R^{1}O R^{2}$$

$$(IV)$$

wherein  $R^1$ ,  $R^2$ ,  $R^3$  and X are the same as defined in claim 1.

6. (Currently amended) A method for preparing inositol derivatives of formula (I):

$$(OR^1)_4$$
  $(OR^1)_4$   $(OR^1)_4$   $(OR^2)_4$   $(I)$ , comprising the steps of

- (a) obtaining intermediates by protecting the hydroxyl groups of myo- or scyllo-inositol;
- (b) obtaining inositol polymers by coupling two or more of the intermediates obtained in step (a) to produce X and/or X' couplings, followed by removal of the protecting groups;
- (c) introducing one or more amino acids <u>corresponding to R<sup>1</sup> group</u> to the inositol polymer obtained in step (b) by acylation; and
- (d) introducing guanidinium groups to the amino acid (R<sup>1</sup>) N-terminal of the inositol polymer so that the amino acids are guanidinylated at the amino groups,

wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, X, X' and p are the same as defined in claim 1

$$-CO-(CH_2)_n-NH$$
  $NH_2$   $NH$   $NH$   $R^1$  is  $NH$  , where n is an integer in the range of 1 to 12;

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/565,164

Attorney Docket No.: Q92717

 $R^2$  and  $R^3$  are each independently H, alkyl, arylalkyl, cycloalkyl, heteroalkyl, - $(CH_2)_mNHR'$ , - $(CH_2)_lCO_2R''$ , -COR''' or - $SO_2R''''$ , where R', R'', R''' and R'''' are each alkyl, m is an integer in the range of 2 to 5, and 1 is an integer in the range of 1 to 5;

X and X' are each independently -O-CO-O-, -O-CO-NH- $(CH_2)_m$ -O-, -O-CO- $(CH_2)_l$ -O- or -O- $(CH_2)_l$ -CO-NH- $(CH_2)_m$ -O-, where m and l are the same as defined above; and p is an integer in the range of 0 to 2.

7. (Currently amended) The method of claim 6, wherein the intermediate obtained in step (a) is selected from the compounds represented by formulae (V) to (XIII):

wherein R', R", I and m are the same as defined in claim 1,

R' and R" are each alkyl,

1 is an integer in the range of 1 to 5,

m is an integer in the range of 2 to 5,

Bn is benzyl, and

PMB is *p*-methoxybenzyl.

Application No.: 10/565,164

Attorney Docket No.: Q92717

8. (Currently amended) A composition for delivering a drug or a diagnostic reagent across a biological membrane into a cell or a nucleus, comprising an inositol derivative of formula (I) and the drug or diagnostic reagent:

$$R^{3}O$$
 $(OR^{1})_{4}$ 
 $(OR^{1})_{4}$ 
 $(OR^{1})_{4}$ 
 $OR^{2}$ 
 $(I)$ 

wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, X, X' and p are the same as defined in claim 1

 $R^1$  is , where n is an integer in the range of 1 to 12;

 $R^2$  and  $R^3$  are each independently H, alkyl, arylalkyl, cycloalkyl, heteroalkyl, -(CH<sub>2</sub>)<sub>m</sub>NHR', - (CH<sub>2</sub>)<sub>l</sub>CO<sub>2</sub>R'', -COR''' or -SO<sub>2</sub>R'''', where R', R'', R''' and R'''' are each alkyl, m is an integer in the range of 2 to 5, and 1 is an integer in the range of 1 to 5;

X and X' are each independently -O-CO-O-, -O-CO-NH- $(CH_2)_m$ -O-, -O-CO- $(CH_2)_l$ -O- or -O- $(CH_2)_l$ -CO-NH- $(CH_2)_m$ -O-, where m and l are the same as defined above; and p is an integer in the range of 0 to 2.

9. (Original) The composition of claim 8, wherein the drug or the diagnostic reagent is an organic compound having a molecular weight ranging from 100 to 1500 g/mol.

AMENDMENT UNDER 37 C.F.R. § 1.111 Attorney Docket No.: Q92717

Application No.: 10/565,164

7,5,5,1,5,1

10. (Original) The composition of claim 8, wherein the drug or the diagnostic reagent is

a polymer compound selected from a peptide and a nucleic acid.

11. (Original) The composition of claim 8, wherein the inositol derivative of formula (I)

forms a conjugate through a covalent bond with the drug or the diagnostic reagent.

12. (Original) The composition of claim 8, wherein the inositol derivative of formula (I)

forms an ionic complex through ionic bonds with the drug or the diagnostic reagent.

13. (Cancelled)